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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/785,006	02/16/2001	Aaron Schoenfeld	303.259US3	5063

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EXAMINER

PERT, EVAN T

ART UNIT	PAPER NUMBER
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2829

DATE MAILED: 10/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/785,006

Applicant(s)

SCHOENFELD, AARON

Examiner

Evan T. Pert

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-25 and 35-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-25 and 35-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11-25 and 35-43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

"layer of scribe material" - The term "*layer of scribe material*" in claims 11, 15, 22 and 25 is conventionally interpreted as being *wafer material removed* from between semiconductor dice in wafer form like saw-dust removed from cutting lines for tile-shaped pieces of plywood, inherently requiring that conventional "scribe material" *does not actually remain* as part of a diced die as is claimed by applicant.

For purposes of examination, however, the examiner unconventionally interprets "layer of scribe material" to mean a layer of die material that is near the die's cut surface before cutting *and also remains as part of the diced die at the die edges*.

"ground" and "polished" - The terms "polished" and "ground" in claims 11, 14, 15, 17, 22, 23, 25, 35, 39, 40 and 41 are relative terms, which render the claims indefinite.

The degree of roughness or smoothness represented by the terms "polished" and "ground" are not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree of smoothness to qualify as "ground" or "polished", and one of ordinary skill in the art would not be reasonably apprised of the scope of "ground" and "polished" aspects of the claimed invention.

In accordance with MPEP 2113 addressing product-by-process limitations, the examiner has determined that the so-called “ground and/or polished” die edges in the context of applicant’s indefinite disclosure is indistinguishable from the so-called “precision” or “smooth” edges of the die taught by Ormond et al. (U.S. patent 5,128,282) [see col. 2, line 48 “smooth ends” and col. 6, line 7 “precision edges”].

In view of the lack of definite scope of “ground and/or polished”, for purposes of examination, the examiner interprets the recited product-by-process limitations of “ground and/or polished side surfaces of a semiconductor die” simply as “smooth ends” or “precision edges” of a semiconductor die [per page 4, lines 21-22].

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 11-25 and 35-43 are rejected under 35 U.S.C. 102(b) as being anticipated by Ormond et al. (U.S. Patent 5,128,282).

Ormond et al. teach a semiconductor die which, as depicted by Ormond et al. in Fig. 5, and as is known to one of ordinary skill in the art, the die *inherently* has a “first surface having circuitry thereon” and an opposing “second surface” which is *inherently* “opposite the first side” [col. 3, line 63 to col. 4, line 5].

Each semiconductor die taught by Ormond et al., like applicant, is shaped in a particular way such that die edges are not chipped or cracked or damaged [compare applicant's page 6, lines 6-19 with Ormond et al.'s, col. 4, lines 57-68].

Ormond et al. teach two offset substantially smooth flat parallel planar perimeter *transverse* (perpendicular) surfaces, as in pending claims 11-25 and 35-43, disposed and located between the first and second major parallel surfaces of the die [compare applicant's Fig. 6 "bi-level edges" with Ormond et al.'s Fig. 5 *inherently* "bi-level edges"]. These perimeter edge surfaces comprise flat and smooth perimeter surfaces created as sidewall surfaces to grooves 40 and as distinctly different sidewall surfaces from cuts by a high-speed diamond saw blade 60 [col. 4, lines 42-43].

Regarding claims 11, 15 and 25, "a layer of scribe material" remains (such as the scribe material forming precision edge surface 11 in Fig. 5).

Regarding claims 13, 15 and 19, Ormond et al. teach that each die is rectangular [col. 3, line 64].

Regarding claims 17 and 39, each edge also *inherently* has a "polished" offset edge surface based on Ormond et al.'s recommendation to chemically treat the groove 40 to reduce any stresses [col. 5, lines 52-55].

Regarding claim 20, Ormond et al. anticipate the bi-level edges on all four sides of their rectangular die to arrange the each of the die abutted with one another to form a well-aligned 2-D array for sensor applications.

Regarding claim 22, the "means" recited in the claim does not distinguish from any prior art semiconductor die since the mere "existence of a die" is a "means" to polish it [See MPEP 2113].

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Evan T. Pert whose telephone number is 703-306-5689. The examiner can normally be reached on M-F (7:00-3:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on 703-308-1233. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

ETP
October 16, 2002


EVAN PERT